Express Mail: EV263396186US
Inventor: Hauck et al.
Docket No.: APPL-P2834 DVB
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Filed: August 5, 2003
Title: METHOD AND APPARATUS FOR BORDER NODE BEHAVIOR ON A FULL-DUPLEX BUS
Attorney: John W. Crosby
Sierra Patent Group, Ltd.

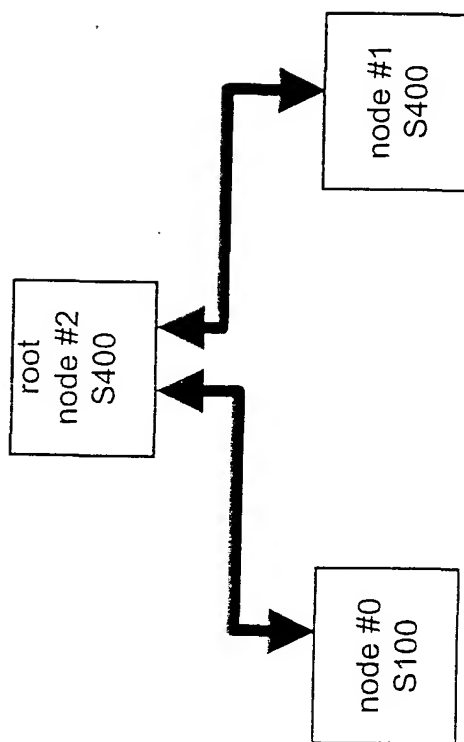| DP	Clocked Data	DE

Fig. 1 (Prior Art)
Alpha Format Packet

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Fig. 2 (Prior Art)
Legacy Compatibility Example

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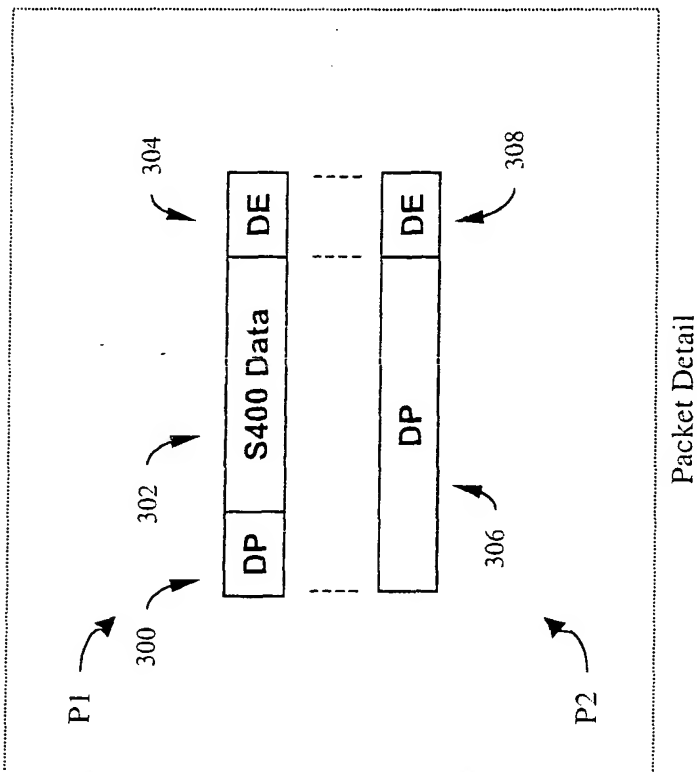
Fig. 3 (Prior Art)
Legacy Speed Filtering Example

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$$\overbrace{\text{Sb1 } \underline{\text{DP1}} \text{ } \underline{\text{B1}} \text{ ... } \underline{\text{Bn}} \text{ } \underline{\text{DE1}} \text{ } \underline{\text{DE2}}}$$

400

Fig. 4 (Prior Art)
P1394b Packet Format

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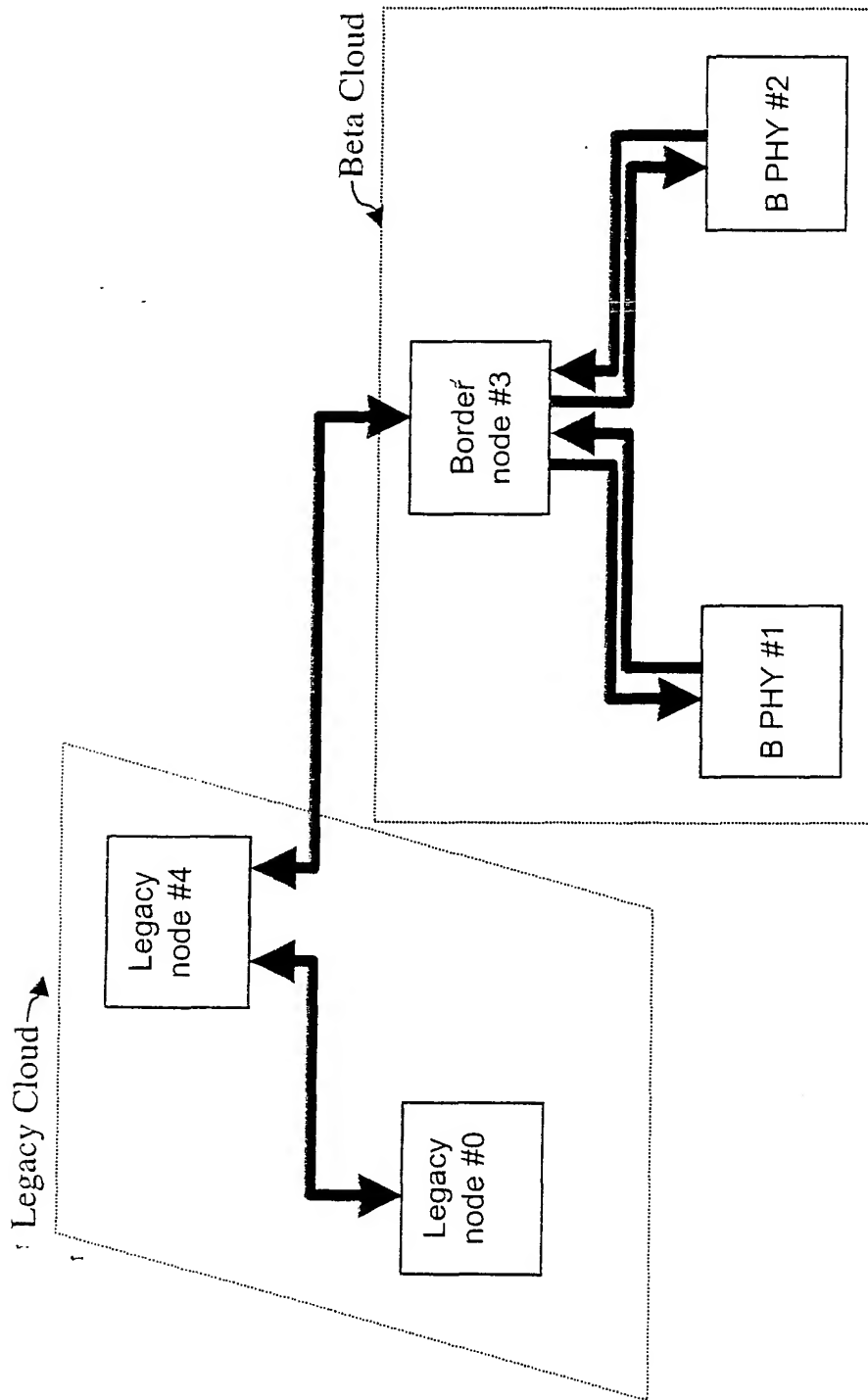
Fig. 5 (Prior Art)
Data Communications System Having both
P1394b and Legacy Devices

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Fig. 6

Detection and Communication of Hybrid Bus
According to the Present Invention

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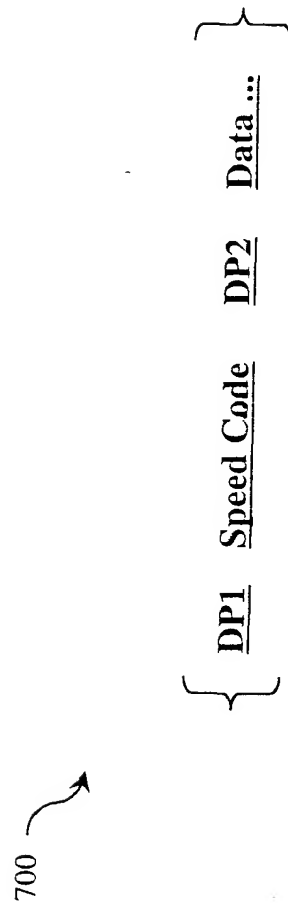Sierra Patent Group, Ltd.

DP1 | Speed Code | DP2 | Data...

700

Fig. 7 (Prior Art)
Legacy Format Packet
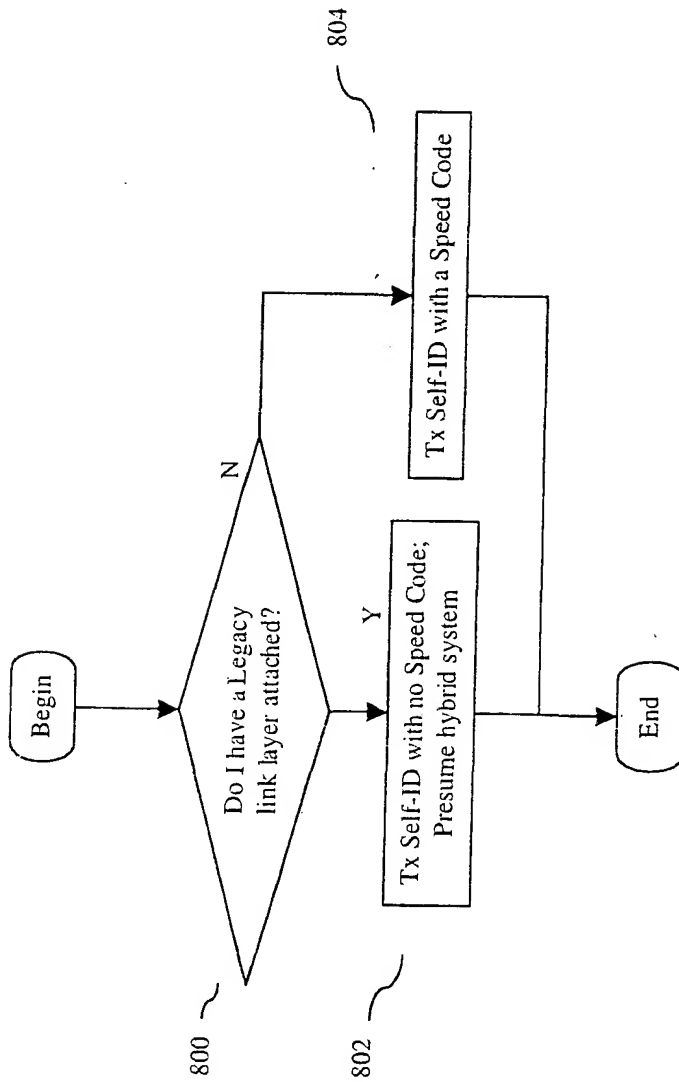
Fig. 8

Detection and Communication of a Legacy Link Layer
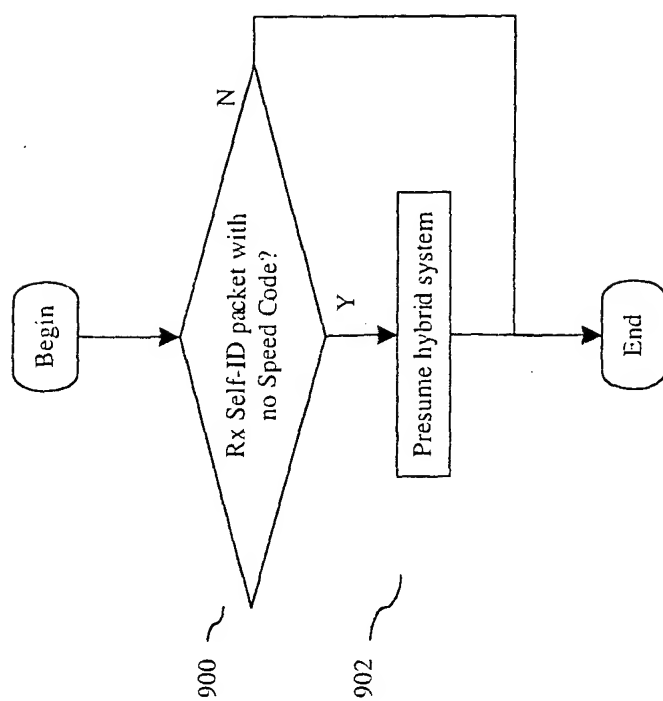According to the Present Invention

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Fig. 9

Detection and Communication of Hybrid Bus
According to the Present Invention

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Begin

1000 — This border node marks itself as the senior border

1002 — During Self-ID, has this border node Rx a Self-ID packet without a speed code on its parent beta port?

N

Y

1004 — Mark parent port as path towards senior border and cancel own status as senior border

End

Fig. 10

Detection of Path to Senior Border
By a Border PHY
According to the Present Invention

Begin

1100 Has this B PHY Rx a Self-ID packet without a Speed Code?

N

Y

1102 Mark last port to receive Self-ID packet without a Speed Code as path towards senior border and cancel any other port having this status

End
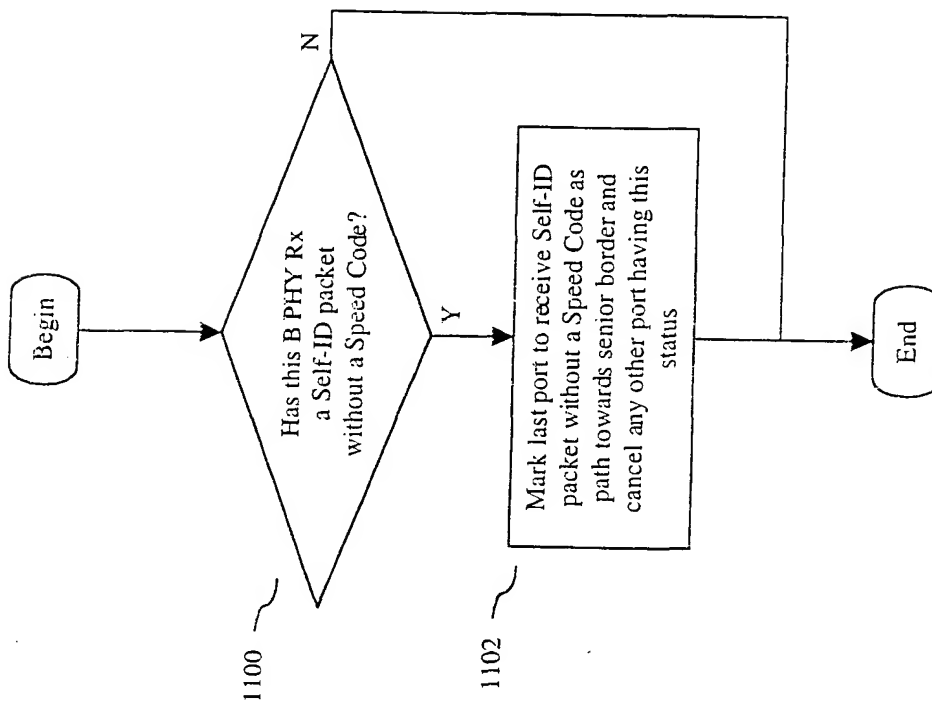
Fig. 11
Identification of Senior Border Node
By a B PHY
According to the Present Invention

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Begin

EOS been reached? 1200

N → Send DATA_END to all ports 1208

Y →

Are there any in-phase requests to grant? 1202

Y → Send GRANT to granted port, and DATA_NULL to all other ports 1204

N →

Am I a preferred border? 1203

Y →

N → Send GRANT out senior port, and DATA_END out junior ports 1206
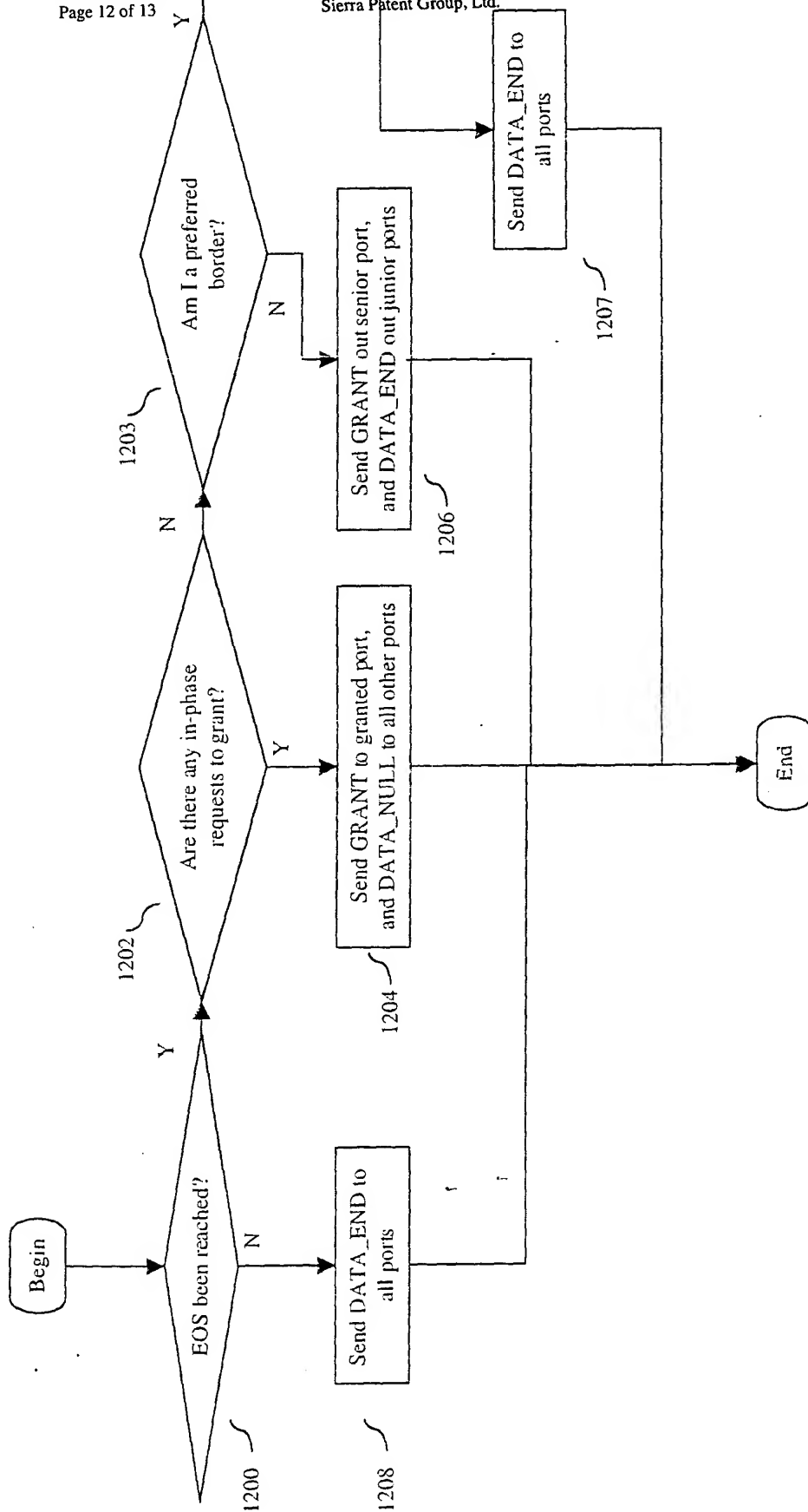
Send DATA_END to all ports 1207

End

Fig. 12
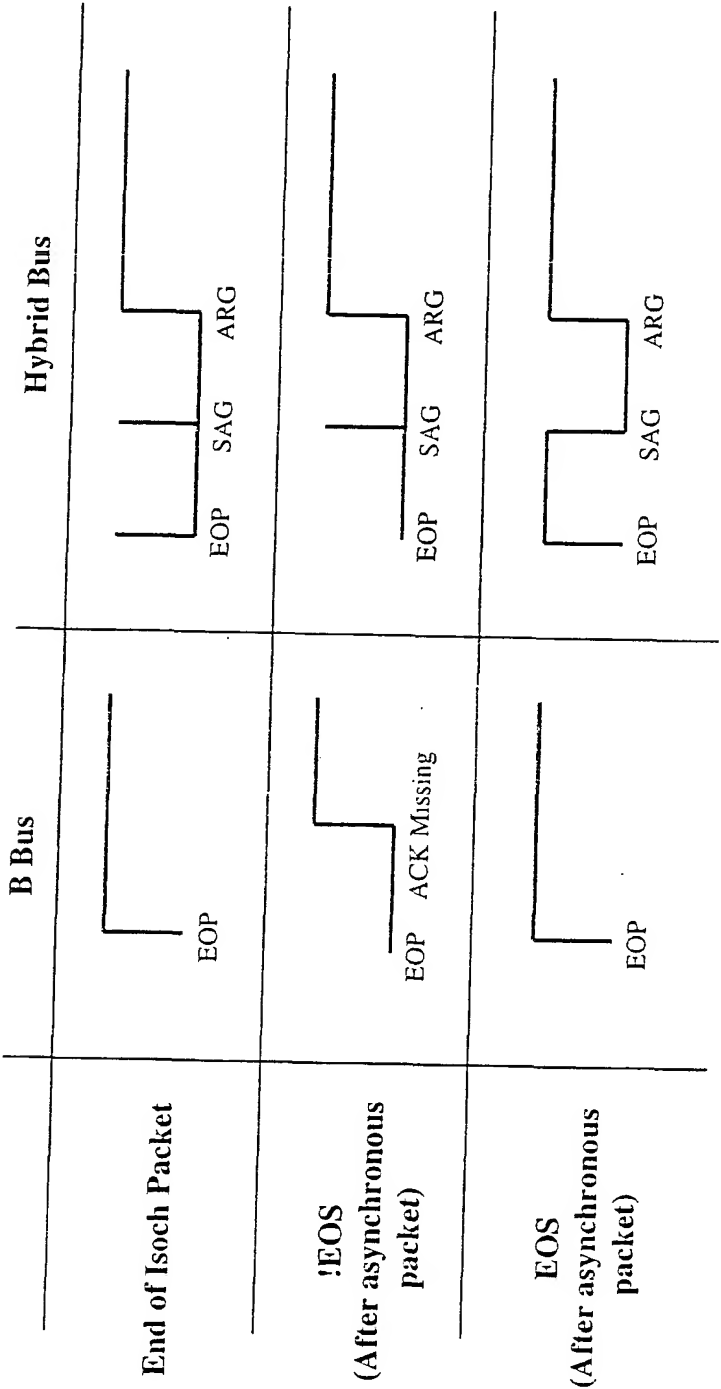Restoring Senior Border as BOSS
According to the Present Invention

Fig. 13
OK_TO_GRANT Profile
According to the Present Invention